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Retention of Placenta in the Buffalo, with Associated Sequelae.

By

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Retention of placenta and its sequelae have been found to be the chief source of trouble from a veterinary standpoint in the Military Farms at Lahore, and have caused considerable financial loss. Under optimum conditions a buffalo should expel the placenta within 24 hours of calving; retention after this period is abnormal and manual interference is required.

The incidence of retained placenta during the summer of 1944 was extremely high, as may be seen from figures given in Table I. It will be seen that out of a total of 944 calving cases 161, or 17·1 per cent., showed retention of placenta over 24 hours; the great majority of these had to removed by hand. It may be noted also that, with one exception (Farm Mc), there was relatively little difference between farms; in every case 13 per cent. or more of calvings were followed by retention. Farm Mc had recently been stocked with newly purchased buffaloes from the villages, where the calves are reared under natural conditions; the change over to artificial rearing may well have been the explanation for the higher incidence of retention on this farm. The general indication was that the condition was widespread and probably occurred in at least 10 per cent. of all calving cases.

Table I.—Showing the Incidence of Retention of Placenta in Four Farms in Lahore Area

Farm	Number of Calvings	Number of Retention Cases
B.	463	74 (16·0%)
D.	254	39 (15·4%)
Mc.	189	43 (22·7%)
Be.	38	5 (13·2%)
Total	944	161 (17·1%)

It has been the experience of local veterinary officers that metritis of varying degrees almost invariably follows retention of placenta. The possible sequelae are numerous; for instance: prolapse of vagina, prolapse of uterus, infection and necrosis of wounds in the genital tract, loss of milk, and in acute cases death from toxaemia or septicaemia. Sterility is a common sequel to metritis, necessitating the sale of many buffaloes. Following acute metritis destruction of maternal cotyledons and fibrosis and organisation of the uterine wall have been met. These imply permanent sterility. We have very few accurate statistics of these sequelae, but the following figures are instructive. On one farm, out of 202 calving cases, 26 animals showed retention of placenta with consequent metritis, and it is likely that a number of these will be permanently sterile. On another farm, out of 132 calving cases, 33 showed retention; and eleven animals died from metritis; thus on this farm 8·3 per cent. of the calvings during that period resulted in death and total loss. This particular farm was under observation for one month. Putting the cost of a buffalo at Rs.350, this farm, therefore, lost Rs.3,850 in one month from this cause alone. The actual monetary loss cannot be computed since no knowledge is available about the cases of resultant sterility, the loss in milk yield, etc.

It will be seen from these few figures that retention of placenta is indeed a cause of considerable financial loss and is likely to interfere seriously with planned stock farming, unless prompt remedial measures are instituted.

When the condition was first brought to our notice we considered the possibility of it being due to *Br. abortus*. Cotyledon smears were examined and agglutination tests carried out on a number of normal calving animals showing subsequent retention of placenta. Of 60 such cases examined by one or both tests only 15, or 25 per cent., showed evidence of *Br. abortus* infection. It was evident, therefore, that this organism was not the primary cause of the condition.

An abortive attempt to deal with the condition by the injection of stilboestrol was tried. Two normal calvers showing retention and negative to tests for *Br. abortus* infection received 25 mgm. stilboestrol intramuscularly three days and one day respectively after calving. The first animal commenced straining 24 hours later and almost everted her uterus; a truss was immediately applied; the placenta was removed by hand six days after calving and the animal recovered after treatment for metritis. The second animal everted her uterus seven hours after the injection and died within 30 minutes. These two cases may have been unfortunate coincidences since other workers have apparently found 25 mgm. a safe dose of stilboestrol for buffaloes; nevertheless our experiments with this hormone thereupon ceased abruptly.

The Effect of Allowing Calves to Suckle their Dams

Experiment No. 1

It has been the practice on the Military Farms in this area to remove calves from their dams at birth and rear them on the artificial teat system. It was claimed that this was necessary since buffaloes, once having been suckled by calves, refused to "let down" their milk to the *gawala* (herdsman); it was also claimed that if calves were allowed to suckle their dams they would not thereafter take easily to rearing by artificial means, with consequent high death-rate. It seemed likely that both these beliefs were fallacious.

In September, 1944, on one farm (Mc) one of us (E.V.) instituted the procedure of allowing calves to suckle their dams. The calves remained in the calving boxes with their dams for the first two days after calving; for the next two days they had access to the dams at milking times only; and on the fifth day they were removed to calf pens and fed on the artificial teat. Observations were made for one month, the results being compared with those of the previous month. As is shown in Table II the results were striking. Out of 189 calving cases in August, 1944, when suckling was not allowed, 43 (22·7 per cent.) were followed by retention of placenta; out of 122 calving cases in September there were only six (4·9 per cent.) cases of retention. The difference of 17·8 per cent. is statistically significant, being over four times its standard deviation.

Table II.—Showing the Effect of Allowing Calves to Suckle their Dams on the Incidence of Retention of Placenta and on the Death-rate from Metritis

	Total Number of Calvings	Number of Retentions	Observed Calving Cases	Deaths from Metritis
August, 1944 (calves not suckling dams)	189	43	132	11
September, 1944 (calves suckling dams)	122	6	92	2
Percentage difference :		17·8 ± 4·2	6·1 ± 3·1	

For various reasons not all these animals were kept under observation thereafter; however certain additional information was forthcoming from the available records. Thus out of 132 calving cases in August, eleven buffaloes (8·3 per cent.) died as a result of metritis; in September out of 92 cases only two animals (2·2 per cent.) died from metritis; again these figures are suggestive, although in this case not meeting the demands of statistical significance.

Of the calves born records were available for 121 born in August and 84 born in September. The death-rates up to five days after birth are shown in Table III. It is noticeable that there is a difference in death-rate between males and females under similar conditions; the two sexes must therefore be examined separately. Among the males it may be seen that there was a difference in death-rate of 34·4 per cent. and among the females 30·5 per cent.; both these differences are statistically significant, being over three times their standard deviations.

TABLE III.—SHOWING THE EFFECT OF ALLOWING CALVES TO SUCKLE THEIR DAMS ON THE VIABILITY OF CALVES

	Males		Females	
	Born	Died	Born	Died
August	76	38 (50·0%)	45	16 (35·6%)
September	45	7 (15·6%)	39	2 (5·1%)
Difference	34·4% ± 9·04		30·5% ± 8·99	

The figures suggested that suckling markedly reduced the incidence of retention and increased the likelihood of survival among the calves—at least up to five days after birth. The experiment was, however, exposed to severe criticism in that the two groups of animals were not under exactly similar environmental conditions; there was in fact a climatic change during this period, the weather becoming cooler in September. Further experiments were therefore devised to check the conclusions under controlled conditions.

EXPERIMENT No. 2

This experiment was commenced on September 18th and continued for 24 days. It was carried out on a different farm (D). On the first, third, fifth, seventh, etc., day of the experiment all calves born were allowed access to their dams for three days; on the second, fourth, sixth, eighth, etc., days all calves born were removed at birth and reared on the artificial teat. The results are shown in Table IV.

Of 52 cases where the calves were removed at birth, 13, or 25 per cent., were followed by retention, whereas of 52 cases where the calves were suckling only five, or 9·6 per cent., were followed by retention. The difference of 15·5 per cent. is statistically significant.

TABLE IV.—SHOWING THE EFFECT OF CALF SUCKLING ON RETENTION OF PLACENTA ON FARM D

Buffalo Group	Number of Calving Cases	Number of cases of Retention
Calves suckling	52	5 (9·6%)
Calves weaned	52	13 (25%)
Difference :		15·4% ± 7·3

This result, therefore, confirmed the original finding that the incidence of retention of the placenta was reduced by allowing calves to suckle their dams.

EXPERIMENT No. 3

Experiment No. 3 was carried out on a third farm (Be). It was commenced on November 1st, 1944, and was continued until January 14th, 1945. The arrangement was exactly similar to that of experiment No. 2, *i.e.*, calves born on one day were allowed to suckle and those born on the next day were removed at birth. Records were kept of the following points:—

1. The number of cases of retention of placenta.
2. The time after which the placenta was expelled.
3. The milk yield on the first, tenth and twentieth days after calving.
4. The death-rate among the calves.

During this experiment cotyledon smears were examined from many, but not all cases; in no instance was *Br. abortus* detected.

There were included in the experiment 97 buffaloes; 38 had their calves removed at birth and 59 were allowed to suckle their dams.

Table V shows the incidence of retention of the placenta over 12 and 24 hours and also the mean time of expulsion in the two groups. In the calf suckling group there was no case of retention of the placenta over 24 hours and only two cases (3·4 per cent.) over 12 hours; the mean time for expulsion in this group was under five hours. In the group where calves were weaned at birth there were five typical retentions (13·2 per cent.) and 15 cases (39·5 per cent.) over 12 hours; the mean time for expulsion in this group was more than 14 hours. It is noteworthy that in each case the difference between the two groups is statistically significant; in other words, it is improbable that these results arose by chance. The conclusion is that this experiment confirmed the findings of the two previous experiments.

TABLE V.—SHOWING THE EFFECT OF CALF SUCKLING ON RETENTION OF PLACENTA ON FARM Be

Buffalo Group	Total Number of Calvings	Number of Retentions		Mean Time to Expulsion (hours)
		Over 12 hours	Over 24 hours	
Calves suckling ..	59	2 (3·4%)	0	4·6 ± 0·4
Calves weaned ..	38	15 (39·5%)	5 (13·2%)	14·4 ± 2·1
Difference		36·1 ± 7·9	13·2% ± 4·6	9·8 ± 2·1

The manager of this particular farm was convinced beforehand that allowing calves to suckle their dams would result in an increased rather than a decreased milk yield. The figures shown in Table VI seem to justify this conviction. In this table are recorded the average milk yield in lb. for the two groups, one, ten and 20 days after calving. For the calf suckling group these values were 11·1 lb., 11·6 lb. and 14·9 lb. respectively; for the calf weaned group they were 7·6 lb., 7·3 lb. and 10·9 lb. The differences of 3·5, 4·3 and 4·4 are statistically significant, all being over four times their standard errors. It is as well to mention here that it has previously been shown (Priestley and Artioli (private communication)), that at comparable lactation periods the milk yield is not obviously affected by variations in age, at least between the ages of six and 12 years. Thus since the majority of animals in this experiment were between six and 12 years old and the period of lactation was constant, the results would appear to be dependent on the other variable factor, *viz.*, that of suckling or not.

TABLE VI.—SHOWING THE EFFECT OF CALF SUCKLING ON MILK YIELD IN BUFFALOES

Buffalo Group	Milk Yield in Lb.	Days After Calving	
	1	10	20
Calves suckling	11·1 ± 0·3	11·6 ± 0·3	14·9 ± 0·4
Calves weaned	7·6 ± 0·6	7·8 ± 0·5	10·9 ± 0·6
Difference	3·5 ± 0·7	4·3 ± 0·6	4·4 ± 0·9

At the time this experiment was carried out the weather had improved considerably, becoming relatively cool. Throughout the whole area the calf mortality had decreased markedly and, incidentally, changed in clinical type from scour to pneumonia. The mortality was, however, still sufficiently high to have revealed any markedly beneficial effect provided by one or other treatment. In Table VII are recorded the deaths and survivals up to seven days of the 97 calves. Most calves over seven days old were slaughtered for veal and therefore automatically dropped out of the experiment. As was noted previously, there was a marked difference in mortality between males and females. Among male calves, in the calf suckling group five died out of a total of 24 as compared with seven deaths out of 19 in the calf weaned group; for females, the respective numbers were six out of 35 and three out of 19. Neither of these differences is statistically significant. It may, therefore, reasonably be concluded that the difference in treatment had not affected the survival rate up to seven days old. This conclusion is supported by the fact, shown in Table VII, that no difference in mean survival times is demonstrable between the various groups; these figures were calculated on the assumption that all animals surviving for seven days died on the seventh day—as is the usual practice.

TABLE VII.—SHOWING THE EFFECT OF SUCKLING ON VIABILITY

Buffalo Group	Males			Females		
	No. Born	No. Died	Mean Survival Time (Days)	No. Born.	No. Died	Mean Survival Time (Days)
Calves suckling ..	24	5	6·2 ± 0·4	35	6	6·2 ± 0·3
Calves weaned ..	19	7	6·1 ± 0·4	19	3	6·2 ± 0·5

Discussion and Summary

The idea for these experiments on suckling is not an original one of ours. Pugh (1944) at a general discussion on reproduction stated his belief that a calf when it suckled its dam brought about a rhythmical contraction of the uterus, which when frequently repeated accelerated the involution of the uterus, and that bi-daily milking of the cow's udder by hand or machine was a poor substitute for the day and night physiological massage of the uterus promoted

by the suckling of the calf. It must be remembered that if involution could be accelerated the risk of metritis was greatly lessened. The high incidence of retention met in Lahore Farms seemed predominantly due to a physiological atony of the uterus due to a change in management from previous parturitions. In this area the practice of allowing calves to suckle their dams instead of weaning them at birth has resulted in a considerable drop in the incidence of retention of placenta in buffaloes. The incidence of metritis, which is a usual sequel to retention, has, therefore, dropped correspondingly. Under controlled conditions the incidence of retention on one farm among 52 animals which had their calves suckling was 9·6 per cent. as compared with 25 per cent. among 52 animals which had their calves removed at birth; on another farm, also under controlled conditions, there was no case of retention among buffaloes which had their calves suckling as compared with 13·2 per cent. among 38 animals with calves weaned. Calves at least up to seven days old appear to survive equally well whether reared artificially or naturally. It is not known what would be the effect of suckling on mortality during the period of the year when calf scour is rife, but there is a suggestion in our work that suckling is beneficial (see Experiment No. 1).

Buffaloes whose calves are weaned at birth give definitely less milk, for at least three weeks after calving, than do animals whose calves are suckling; the average difference in milk yield may amount to as much as 4 lb. per animal per day.

The underlying cause of expulsion of placenta as a result of suckling has not been determined. It may be either a reflex action or due to stimulation by hormones.

The results reported in this paper show conclusively, we think, that allowing calves to suckle their dams is beneficial in every way. It reduces the incidence of retention very considerably; it therefore reduces metritis from this cause; it leads to an increased milk yield, and it is probable that it increases the likelihood of calf survival.

Before suckling was introduced into this area the financial loss must have been enormous. Assuming that (*a*) 5 per cent. of calving cases were followed by total loss through death or sterility—probably a low figure, (*b*) the cost of a buffalo was about Rs.350 and (*c*) the price of milk was 3 to 4 annas per lb., the following approximations can be made. Among the 3,000 odd milking animals in this area there would be each year a loss of about 150, representing some Rs.4,000 a month. In addition there would be a daily loss in milk yield of about 6,000 lb. (allowing for a difference of only 2 lb.), representing some Rs.11,000 per month. In other words, there has been a monthly loss of approximately Rs.15,000 directly attributable to retention of placenta. The loss must indeed have been far greater than this, since no account has been taken of expenses for loss of calves, labour involved in removing placentae, drugs for treatment and doubtless many other factors.

A certain amount of retention still occurs, of course, even though calves are allowed to suckle their dams, but it is probable that the incidence is reduced by 75 per cent., which represents a monthly saving of at least Rs.10,000.

Acknowledgments.—We would like to express our thanks to the various farm managers who co-operated in these experiments, and also to Major F. W. Priestley, R.A.V.C., Officer i/c Military Veterinary Laboratory, Lahore Cantt., for his valuable advice and especially his assistance in compiling and interpreting statistics.

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THE DAIRY BULL

"What should a dairy bull look like?" asks the *Home Farmer*, and continues: "There are few who, by inspection alone, are any longer willing to predict, within 200 to 400 gallons, what a dairy cow will give at the pail. Recording has proved that such predictions are fruitless. There are still fewer who are prepared to connect type points in a bull with the yields of his daughters. Granting this, does there remain a close relationship at least between the type of a dairy bull and the dairy type of his daughters? That is, do the text-books and the show standards which place so much emphasis on 'masculinity' really help us to breed refined 'feminine' daughters? Masculinity is often taken to mean great strength and muscular development; in such a case it seems natural to expect a sire with such attributes to breed 'masculine' sons but less natural to expect him to breed 'feminine' daughters. The evidence one sees daily in human heredity would seem to bear this out.

"The point is interesting in connection with the selection of bulls for artificial insemination centres. Would the members of a centre use a bull that was not a show yard specimen but who was known to be siring very fine dairy type daughters? And there are such bulls!"

A Student's Reflections on Present-day Veterinary Education.

By

A. MONTEFIORE

It is part of a much-maligned bogey known as "British Tradition" to leave introduction of change to leaders, and for that reason suggestions or criticisms from lower strata are usually frowned upon. In this instance a student, so incapable as to have been unable to pass the second-year examinations, is showing the audacity to query (respectfully) our methods of veterinary education. After the failure referred to, a prolonged gap in his own studies gave him time to ponder, and what follows are certain questions which presented themselves and an effort to answer them. The whole is therefore a purely personal aspect, but may have some slight value at a time when many are talking of reorganising general and medical education, but have long since forgotten their own period of learning.

I undertook the course leading to M.R.C.V.S. for a variety of reasons, among them interest in animal life, agriculture, medicine and outdoor work. Within two years I was doubting the wisdom of my choice, found myself out of depth in the "cram" of histology, embryology and bio-chemistry, and my interest waning. Then came the grim diversion of World War II and 18 months' intense equine clinical work under army war conditions, often comparable with those of country practice. Immediately my interest revived, and through working with the sick I experienced a complete readjustment in my attitude toward those subjects which form the first years of the curriculum. This surprised me, until I realised that originally interest in the healthy body had been aroused by interest in disease. Therefore I asked: "Though our present system is more logical, has the origin of medicine any deeper significance and do we leave clinical work till too late?" My own answer to both is "Yes." Despite the increase in preventive medicine, the main purpose of practice is to deal with sickness, and I find it far easier to regard the sick animal as a co-ordinating factor rather than as a peak to be reached by a multitude of separate paths. I think that although this attitude is automatically adopted after qualifying, it would make a considerable difference to the student during the educative period.

Thus, though it was difficult to appreciate the need for a detailed study of health on its own, I found, paradoxically, that disease brought me back to health. It seems to me that some day the preservation of health will far outweigh both prevention and the alleviation of sickness, so that though disease might be the best co-ordinator of our studies, its chief value may be as a necessary spur to the study of health. Strangely enough, we devote years to studying aspects of the normal animal, but find practically no place for health as such, and I think we would do better to stress more the vital importance of health.

This led to a consideration of the arrangement of the curriculum, the system of instruction and methods of examination.

It is questionable whether due regard is paid to the subjects of the first two years in relation to their value to post-graduate work, both in the time allocated to them and in the stress placed upon them by their respective instructors. We might see some remarkable results if a group of capable practitioners were asked to sit, without warning, current examination papers in chemistry, botany, embryology, possibly histology, zoology and bio-chemistry, and even the less common points of pathology, bacteriology, pharmacology and parasitology. This may sound a slight on the practitioner, but is not; knowledge is kept alive and progress made only in work used regularly, and it may be easily verified that, except for the specialist, contact with much of the subjects named is largely lost.

A possible solution to this strange state of affairs would be a regrouping of subjects and a change in method of teaching, stressing such points as are now almost overlooked. As the standard required in botany and inorganic chemistry is not greatly in advance of matriculation, the suggestion presents itself of making a pass in these subjects compulsory in matriculation (pass or credit in corresponding school certificates) and omitting their study from the syllabus.* The regrouping in mind is based on studying parallel subjects together, and using where possible the contrast of the sick to illustrate the fit. For example, zoology, taught from a broad basis of development and evolution, would run concurrently with embryology, allowing each to explain the other; physiology with organic disease, and, simultaneously, anatomy with surgery; histology with microscopic pathology and bacteriology; biochemistry with pharmacology and therapeutics, and many aspects of animal management with control of the sick animal.

A different attitude towards instruction could only come about through a changed outlook among our teachers. At present, due to

* I believe this is already under consideration.

the dictates of a questionable examination system, each teaches as a self-subsistent specialist, hurls facts innumerable at the dazed student and adopts the keyword: "Remember." My reasons for doubting this system are those already mentioned concerning the gap which quickly arises between the qualified man and many aspects of the subjects studied at college. I am concerned with the important fact that the average student (speaking generally) adopts the attitude of his examiners and professors and regards each subject as a hard "cram" to be gladly discarded as soon as a coveted pass or distinction is gained. The suggested alternative, which would necessarily need to be mutually introduced by examiners and teachers, is to relegate "Remember" to a subsidiary position, and substitute "Understand," a procedure which may seem obvious but is certainly ignored. Co-operation among teachers would be essential and it would entail a far greater stressing of fundamentals with emphasis on grasping basic principles at the expense of the present indiscriminate distribution of the important and the superficial; an attempt to make reasoning from such ground largely replace wholesale "cramming" and to inculcate simultaneously with the teaching of data, whether long since or recently established, a mild scepticism and a broader outlook, *i.e.*, a correct scientific attitude.

Examiners would have to set the keynote to any innovation, and theirs would be no easy task, for though no comprehensive substitute appears to have been put forward, it is generally acknowledged that the established system is to a large extent a failure under modern educational methods. (I have worked with veterinary surgeons who have passed their examinations with ease, but have cut almost pathetic figures in practice. In my view, such cases provide the evidence needed against present examination methods.) A feature which might bear investigation is the use of psychological tests. Still an unsettled quantity, these tests have their enthusiastic advocates and their violent opponents. I think they should be seriously considered as an aid to examinations in view of the fact that they have been used with apparent effect among medical and army students in the U.S.A., and are employed with success by such bodies as the National Institute of Industrial Psychology.

For the rest, examiners would need to seek the students' depth of understanding to ascertain if an attempt has been made to induce them to think. The following examples will illustrate this point. In embryology questions and answers refer to small individual facts. Personally, I had virtually no conception of the whole marvellous process of earthly growth until I read a slim, almost non-technical volume by C. H. Waddington called "The Development of Animals." Physiology demands similarly a parrot-like repetition, but seldom "Why should that be?" or "Why does this theory hold the field?" or "How did this work grow and how do you think it will progress?" In therapeutics the student is expected to remember accepted doses, but later may discover that in practice such doses may fail to have the prescribed effect and that often research workers and foreign practitioners use far larger quantities. Written papers would not be over simplified nor made too difficult if more questions were worded so as to force students to think and write individual answers, a matter which would be facilitated if much greater use were made of films rather than semi-dictated notes, allowing students to write their own account and, where possible, draw their own conclusions. And would we lose or gain if most of our examiners and teachers in the early years were men with some clinical experience in veterinary or medical work?

The remaining sphere in which perhaps examiners could help most, would be in emphasising aspects of work most closely bearing on practice and in attaching greater importance to oral examinations which should cover a wide field in an effort to discover what the student does know as much as what he does not. In this respect I think attention should be given to a teacher's report, for though there might be a tendency to favouritism, it would assist those who react badly to examinations.

Regarding the curriculum, I venture to suggest a readjustment and two or three innovations. The first is in reference to clinical work and automatically raises the question of college hospitals. I think it obvious that every college should have attached an extensive large- and small-animal hospital, even at the expense of changing present unsatisfactory locations. This is surely more important than suggested schemes for college farms, for, whereas students may seek farming experience during vacations, they cannot obtain clinical work under the active guidance of a group of widely experienced teachers. The ideal would be a combination of the two methods.

As a next step, I venture to suggest clinical work in increasing quantities from the start under the following type of arrangement. A professor responsible for each ward or group of wards would control a number of senior students, who would be virtually in charge of cases, diagnosing (if possible), treating and case recording under the professor's watchful eye. Working under and learning from them, there would be a number of junior students to act as dressers and assist in administration of drugs, control, etc. Regular changes would ensure experience with all stock and different departments.

I visualise several advantages. Constant handling would make it possible to omit large sections of the present animal management course. Junior students would acquire proficiency in handling and bandaging—small essentials in which I have known veterinary surgeons woefully inefficient. Senior students would have to achieve independence in dealing with cases and would lose much of that nervousness often apparent in the newly qualified. The most minor operative procedures would become routine work and more active assistance could be allowed in the operating theatre. Students would become accustomed to the fact that a large percentage of cases do not conform to textbook description; and invaluable experience would be gained through talking to and instructing those who know little or nothing of the sick animal. Professors would without a doubt be able to estimate who had the makings of a veterinary surgeon, whilst students would know early in their course whether or not they had a bent toward clinical and other veterinary work.

A supposed drawback in using drugs and treating disease in practice before the theory of their actions has been acquired has in my own case been an added advantage, for I find it easy to remember cases and these help greatly not only to explain, but to put one in a position to comment from practical observation on the theoretical aspects. Reading about antiseptics or methods of suturing becomes not so many words but something with which one feels justified in agreeing or otherwise. Parasitology, though an intriguing science, is to the student one of the worst grinds, but strongylosis is a comprehensive picture after seeing debilitated horses, searching out and counting eggs in faecal examination and watching a great improvement in condition follow medical administration. It is far more interesting to read about and infinitely simpler to follow theoretically, operations which have already been witnessed. Symptoms change from a series of phrases to an easily remembered living process.

An increased amount of clinical work must make the student realise in what particular branch he feels most interest, and this leads to another point which must, I think, be sooner or later reviewed—the wisdom or otherwise of awarding the M.R.C.V.S. as a general diploma and making it a compulsory qualification for "State" veterinary work as well as to practice. The day has long passed when a veterinary surgeon can be everything. Surgery, though a limited field, is continually advancing, yet only a few have an aptitude for other than the simplest operations. Bacteriology and pathology have passed beyond the stage of a casual few minutes spent occasionally by the G.P. at his microscope. Yet, although a short post-graduate training after the current bacteriological course would turn anyone interested into a fairly capable bacteriologist, the profession relies for all diagnoses of notifiable diseases on one laboratory. Is it not time we made the M.R.C.V.S. a specialised degree relating to surgery and substituted some general qualifying degree as B. and D. of V.M.? And should not the profession be so organised as to allow of more post-graduate specialisation, for how else can we keep pace with the increase of veterinary knowledge?

The innovations I have in mind need not be a further burden on a crowded curriculum, for we have the space tentatively vacated by inorganic chemistry and botany. The first I would term "Current Affairs," to occupy only an odd lecture or two weekly and not necessarily have an examination as its goal. The ground covered would be latest research work and extracts from periodicals with their significance. It would embrace not only veterinary but related medical and general scientific work and would be concerned not only with British progress but with important developments in all countries. This task would necessitate wide reading and interests on the part of the teacher, but would, I think, broaden the mind and arouse and develop an interest in current technical literature, avoiding the narrowness found in so many members of every profession. It would also help to bear out routine lectures and would make us realise we are prospective members of a growing, widening profession, which, like other sciences, is a world-wide concern.

The second innovation is harder to define. It is an attempt at basic instruction of a general nature in aspects which appear (to me) to be of major importance and might be called "General Relations." It would seem that the profession as a whole might be made more aware of its position in relation to health in general (and, this I feel, with certain of the above, applies equally to the medical profession). We occupy an intermediate position in a quartet of soil, crops, stock and man. Healthy soil is the foundation without which crops, stock and man cannot hope to keep fit; yet this matter is never considered in medical or veterinary, and even rarely in agricultural curricula. It is studiously ignored, if not unknown, by the general run of agriculturists, veterinarians and doctors. Those who feel aloof or sceptical would do well to read such works

as: "The Wheel of Health," by Dr. J. T. Wrench; "The Living Soil," by E. Balfour; Sir A. Howard's "An Agricultural Testament"; "The Rape of the Earth," by G. V. Jacks and R. O. Whyte; accounts of the work of Maj.-Gen. Sir R. McCarrison; "The Peckham Experiment: a Study of the Living Structure of Society," by Dr. Pearse and L. H. Crocker; or that vital publication, the "Medical Testament of the Local Medical and Panel Committee of Cheshire (1939)."

Given healthy soil we must produce healthy crops—not necessarily the highest yields; given healthy crops we cannot avoid producing far healthier stock, again not necessarily highest yielders; and with healthy crops and stock we must automatically lay the best foundation for healthy people. Relationship with human medicine can be brought about only by a certain amount of comparative study, and then perhaps doctors and veterinary surgeons would realise that theirs is common ground and that each can learn from the other. Like our medical confrères, we regard disease as an evil to be cured and combated with preventives, and consider that dietary deficiencies need to be adjusted with complex proteins and vitamins. Seldom do we adopt the attitude that present scale sickness and poor, deficient food need not be present in the first place. Are we never to learn the obvious lessons that not without reason do wild plants rarely show disease; that wild animals, even on the verge of starvation, seldom provide material for the pathological laboratory; or that many native peoples breed such fine physical specimens? Can we expect any easing of present mental chaos if the vehicle of mind is itself below standard?

Last comes a suggestion of some method whereby the newly qualified should be equipped with a sense of position over and above the possession of a degree. The mere thought of openly discussing in an English scientific institute matters usually assigned to the realms of sociology or politics is enough to make any board of governors throw up its hands in horror; but before the idea is ridiculed, it may do well to consider the predicament of the medical profession. It took a revolutionary White Paper to make members of that profession, often so aloof on such matters, suddenly realise that as well as doctors they were members of a community. It may well have been a degree of ignorance which produced the flood of letters in medical journals often voicing less intelligent types of government and party propaganda, and frequently showing a sad lack of thought.

The same problems face veterinarians and we could only gain if we, as individuals, knew openly why we objected to a rising tide of socialism with its attributed threat to enterprise and freedom, or if we saw in State service scope for ability, a more united field of work and an organisation which could tackle problems on a national scale, and allow essential specialisation without the burden of financial worry and job hunting. It could do no harm if we formulated a united policy on patent medicine and took steps to put it into effect; on whether or not we should discard completely our antiquated measures in favour of the metric system; on the advisability or otherwise of using the rational American phonetic spelling for drugs, etc.; and on whether scientific basic English could advantageously replace our established dependence on Greek and Latin. It might provide many with no small satisfaction to be made aware of the relation of their science to science in general; to be aware not only of their individualism but of their relationships as part of a community, a community which must seek closer understanding with other communities and move with science in a quest for international welfare and progress.

In this brief account of certain purely personal impressions, the educational aspects which have been criticised are the present grouping of subjects with equal stressing of matters of greater and lesser importance; methods of instruction which indulge in a barrage of specialised facts and are content to ignore the students' understanding of them so long as he remembers; the omission of the relevance of fundamentals and basic principles; the examination system which endorses such teaching and makes little effort to correlate success in examinations with post-graduate capabilities; the insufficiency of undergraduate clinical experience; and the superficial outlook bred to-day by neglect of any broader relations of a scientific or social nature.

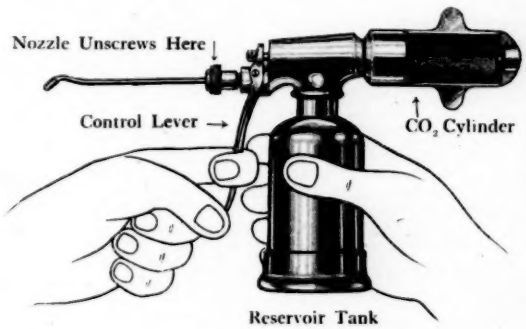
In an attempt to solve these difficulties, which I believe to be more real than imagined, suggestions have been offered of resting content with botany and inorganic chemistry of matriculation standard, pre-registration, and running concurrently related subjects in health and disease; placing more emphasis in teaching on understanding and ability to reason, on fundamentals and on subjects more closely related to practical application, with more co-operation among teachers; making examination results a real criterion of ability by more direct bearing on practice; greater use of orals to discover the grasp of a subject, and the possibility of psychological tests; a wider and earlier use of clinical work and films; and, finally, a real interest in and not a virtual fear of work to be done, with some knowledge of position in a general scheme of health, science and community, local, national and, perhaps, international.

Clinical Applications of the Human Type of Dental Spray.

R. K. ARCHER, B.A. (CANTAB.)
Final Year Student, R.V.C.

The instrument employed is not a simple CO_2 spray but works upon the principle of a gas-bulb-driven soda water syphon. The reservoir tank which constitutes the handle holds about a quarter of a pint, gas pressure being provided by a small cartridge connecting with the head of the tank. When the lever controlling the jet is depressed a fine, hard, penetrating spray of liquid from the tank in CO_2 gas is produced. Both the CO_2 cylinders and the tank can be refilled independently of one another. The jets are readily removed to be cleansed, and the whole apparatus can be sterilised by boiling (before charging).

The sprays used were made by Messrs. Sparklets and cost approximately two guineas. Additional interchangeable jets cost 5s. each, and CO_2 cartridges 4s. a dozen. One cartridge will serve several reservoir tanks full of fluid so that the spray is not particularly expensive to use.



(Control lever is pulled in direction indicated by arrow.)

Local surface anaesthesia as, for instance, in the removal and scaling of teeth of small animals, may be induced very satisfactorily. Procaine hydrochloride 5 per cent. w/v has been used and the gums thoroughly sprayed with it near to the affected teeth some three to five minutes before commencing the operation. The force of the spray results in deeper and more prolonged anaesthesia than that produced by ethyl chloride. In addition there is a useful detergent effect which is not given by other anaesthetic methods.

In the treatment of open wounds in large animals sulphanilamide E.O.S. in distilled water has been most frequently used, but upon other occasions 1:10,000 acriflavine or proflavine were employed. By use of the spray clumsy swabbing is avoided and by getting the nozzle head well into the wound any debris is removed, leaving only antiseptic fluid behind. Healing is rapid after this treatment and it is suggested that this may be due to the fact that the spray can reach many minor cracks and crevasses which are not visible from the surface of the wound.

Penetrating wounds and abscesses are particularly suited to treatment in this way. The nozzle of the spray is some 3½ inches long and is introduced to the depths of the wound before pressing the spray release lever. Any pus and loose sequestra are blown clear and by slowly withdrawing the spray while it is still going the whole cavity may be left full of an antiseptic fluid. Abscesses, after lancing, have been dealt with in a similar way.

Weekly Wisdom

"He who labours in the cause of science, whatever his labour may amount to, acts a meritorious part and deserves the acknowledgments of his professional brethren; and ought, in justice to himself and satisfaction to them, to annex his name to his performance: and he who writes with a view to correct the conduct of others or reform abuses, and has not the courage or candour to subscribe his signature, is the most likely of all other persons at another time to find fault without cause, asperse private character, make a stab at reputation, and thus do more harm by one such lampoon than the amount of good from all his writings of an opposite tendency put together."—L. Percivall, *The Veterinarian*, 1828, Vol. I, p. 36.

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Sydney Royal Show, the event with the largest attendances of any stock exhibition, will not be resumed till 1947. The showyard is being used for demobilising the Forces.

ABSTRACTS

[Water as a Vehicle for the Infusion of Sulphanilamide in the Treatment of Mastitis. Knott, C. B., and Petersen, W. E. (1944.) *J. Amer. vet. med. Ass.* **105**. 212.]

The authors quote the results of a preliminary trial in which sulphanilamide was suspended in distilled water for intramammary injection. The advantage sought over the method in which the substance is suspended in oil was the possible reduction in the number of injections required together with a more rapid diffusion in the gland. A 10 per cent. freshly prepared suspension was employed and volumes up to 600 c.c., depending on the capacity of quarters, were infused on two occasions by gravitation. While the experimental data are confined to the results obtained from four cases, they indicate the value of the method in improving the character of the secretion in cases of acute mastitis.

S. J. E.

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[Clavacin Therapy in Bovine Mastitis. Petersen, E. H., and Graham, R. (1944.) *Amer. J. vet. Res.* **5**. 316.]

Clavacin, an antibiotic substance from the mould *Penicillium patulum*, was tested in the treatment of 19 quarters infected with streptococci. The substance proved unsatisfactory as a therapeutic agent due to the irritation produced.

S. J. E.

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[Hog Cholera Vaccines. Sippel, W. L., and Casselberry, N. H. (1945.) *Cornell Vet.* **35**. 152-157.]

A general review of swine fever vaccination, describing the crystal violet incubated blood vaccine and Boynton's incubated tissue suspension vaccine. Most of the complaints following the use of these vaccines have been due to mistaken diagnosis or improper use. In 49 per cent. of troubles investigated in 1943 by one laboratory the swine erysipelas organism was isolated in pure culture. Improper use includes vaccination of pigs too young or in poor condition or, it is claimed, injection of vaccine in a place where it is not absorbed.

W. M. H.

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[A New Method of Cropping Dogs' Ears. Whitney, L. F. (1945.) *Vet. Med.* **40**. 159-162.]

Ear cropping in dogs is an unnecessary operation. The A.V.M.A. disapproves of it and many American veterinarians refuse to perform it. Since, however, it is still performed by kennelmen, using crude methods and without any anaesthetic, the writer of this article is one of those who consider that veterinarians should undertake the operation rather than allow the animal to be treated by untrained people. In Connecticut it is illegal for non-veterinarians to carry out cropping, but the reluctance of many veterinarians to perform the operation results in its being still largely in the hands of the untrained. The author describes and illustrates in detail a method of cropping which eliminates the haemorrhage which is an objectionable feature of former methods.

The main features of the method are: the skin is disinfected but not shaved; the animal is anaesthetised with sodium pentothal; the portion of ear is removed by means of the old type of straight edge emasculator, which is allowed to remain in place for at least one minute; the portion of ear is cut away at the lateral edge of the line of the emasculator and the two layers of skin are united by gut sutures at ½-in. intervals. The position of the emasculator is first marked by applying curved forceps to the ear and care is taken that the two ears are eventually symmetrical. The ears are carefully dried and then either fixed with aluminium guides and adhesive tape or else glued together with liquid adhesive. In the latter case the ears separate at seven to ten days and there is little or no puckering.

E. G. W.

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[Embryo Mortality Accompanied by Pasty Eyes and Severe Losses in Ducklings associated with Avitaminosis. Peterson, E. H., Morrill, C. C., and Graham, R. (1945.) *Amer. J. vet. Res.* **6**. 96.]

On a large duck farm in central Illinois the sole ration fed to the breeding ducks and ducklings for a period of two months was a musty sample of a commercial pelleted food. The egg yield was reduced by 10 per cent. and fertility by 11 per cent. Many of the newly hatched ducklings were small and weak and showed imperfect closure of the umbilicus. Some were permanently blind and others had a watery discharge from their eyes. They nearly all died within a few days. Ducklings apparently normal at hatching became unthrifty, showed muscular weakness and inco-ordination, and died within a month. Bacteriological examinations were negative.

The livers of the apparently normal birds contained appreciable amounts of vitamin A and carotene, but there was little or none in those from affected birds, and the plasma carotene of the former was significantly higher than that of the latter. Sections prepared from various levels of the nasal passages showed evidence of vitamin A deficiency, and the food was shown to be low in both carotene and vitamin A.

Some newly hatched ducklings were divided into three groups and all received the pellets. In addition, group 1 received 0·5 c.c. of wheat germ oil supplement, and group 2 1,000 units of vitamin A as cod-liver oil per head every third day for two weeks. The survival rate was 2 per cent. for group 1, 28 per cent. for group 2, and 4 per cent. for the control group. Leaving out birds which died during the first week, the survival rates were, respectively, 3 per cent., 50 per cent., and 8 per cent. It is suggested that the losses were due to a deficiency of vitamin A and possibly of vitamin E, brought about by the deterioration of these elements through the rancidity of the food. The health of the flock rapidly returned to normal when the food was changed.

J. O. L. K.

Questions and Answers

"Questions and Answers" will be published on alternate weeks.

The submission of questions for inclusion in this column will be welcomed: they can relate to any aspect of veterinary work. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address.

Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.

All communications should be addressed to the Editor.

The Comparative Tuberculin Test

Q. CXXII.—*Is it possible, from the results of a comparative tuberculin test, from which it is deduced that non-specific infection exists, to detect a co-existent bovine infection?*

A.—Presumably the questioner means that the animal in which a diagnosis is sought by the test is a member of a herd which shows reactors to the avian tuberculin only. There is no evidence in *post-mortem* work which has been done to indicate that any animal infected with bovine type tuberculosis is allowed to remain in a herd because a co-existent infection of some other type masks the reaction produced by the bovine type infection.

It should be appreciated, however, that very careful work on animals experimentally infected with one type of organism with another infection superimposed is necessary in order to appreciate fully the test results which can be expected in animals with a dual infection.

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Passive Transference of Sensitivity to Tuberculin through the Milk

Q. CXXIII.—*Is it possible for tuberculin produced from lesions in a cow with tuberculosis of organs other than the udder, to pass in the milk in sufficient quantity to cause allergic sensitivity to the intradermal test in the calf ingesting the milk?*

A.—The active principle in tuberculin which elicits a reaction in an affected animal is a tuberculo-protein and is formed during the growth of the tubercle bacillus in suitable synthetic media. In the body, sensitivity to tuberculin is undoubtedly induced by products elaborated by the organism, but their exact nature is still obscure and they may not be tuberculo-proteins. There is insufficient knowledge concerning their qualitative properties and the amounts produced to determine whether by passing through the milk of cows they can sensitise the calf to tuberculin.

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Avian Tuberculosis

Q. CXXIV.—*Is avian tuberculosis in cattle always retrogressive and of no clinical importance? This question is asked because cattle have been met which gave a reaction to avian tuberculin in excess of that to mammalian tuberculin for two or three years, and which later developed clinical tuberculosis and were slaughtered under the Tuberculosis Order. Are there any macroscopic differences between avian and mammalian lesions present in cattle, or is allergy to avian tuberculin acquired by contact with infected poultry without an actual lesion being developed?*

A.—In general, the lesions produced in cattle by the avian bacillus are retrogressive and although they may persist for a considerable period it is probably safe to regard them as of minor clinical importance. Their location suggests that infection is usually acquired by the alimentary tract since the mesenteric glands are more frequently affected than are any other sites. Avian bacilli can, however, establish themselves in the uterus where they may produce moderately severe changes. Plum has reported abscesses in the uterine mucosa and abortion at all stages of pregnancy.

The macroscopic foci formed in the lymphatic glands by the avian type are typically tuberculous in appearance and cannot be differentiated *with certainty* from moderate lesions caused by the

bovine type. It is improbable that cattle can become sensitised to avian bacilli without the development of a focus of infection, although in many instances the lesions are so small that even a thorough search may fail to find them.

Animals which have given a larger reaction to avian than to mammalian tuberculin and have subsequently been slaughtered under the Tuberculosis Order, are probably suffering from a dual infection with bovine and some other acid-fast organism which may be of the avian type or may be the bacillus of Johne's disease. At the same time, if it is suspected that clinical tuberculosis has been produced with infection with the avian type of organism it would be of considerable interest to have the lesions submitted to a laboratory for typing of the organisms.

The number of animals which are taken under the Tuberculosis Order in the circumstances mentioned is extremely small. In some cases the animal may have acquired a true bovine type infection subsequent to the tests. In some cases, when the reaction to both tuberculins is very large, the differentiation between the reactions is apparently lost and in such cases it is often advisable to retest the animal. It should be stressed that the comparative test must be regarded as a herd test and careful clinical examination is advisable along with it: for instance, there have been cases where the herd tests show that calves are affected with bovine tuberculosis and where clinical examination of the cow has disclosed an animal which is affected with tuberculosis in a form which can be diagnosed clinically and yet the cow in question did not react in such a way that its removal from the herd was *clearly* necessary.

White Clover

Q. CXXV.—*From a botanical, nutritional and chemical aspect how does white clover differ from natural wild white clover? If the latter predominates in the herbage of a field, cattle grazed on this land thrive well and in some cases get fat without additional feeding.*

A.—Both wild and cultivated white clovers are botanically the same species but great variation exists among different strains. These differences can be distinguished by size of leaf, stolons, flowers and seed. There are also physiological differences in the time of flowering. From the nutritional and economic aspect, there is very little difference in the value. The cultivated white clovers being more luxuriant in leaf production give a higher rate of nutrients per acre.

The cultivated white clovers do not generally persist under pasture conditions so well as the wild white, but the endurance of cultivated white clovers varies considerably with variety, the least persistent being Dutch white clover. Strains of New Zealand and S.100 which are now on the market will persist for quite a reasonable length of time under pasture conditions. The presence of white clover, both the wild and cultivated forms, in the pasture enhances the feeding value of the herbage. This can be stated to be directly due to the presence of the white clover itself and also the indirect effect it has on the graminous herbage present, it being well known that all white clovers through the agency of bacteria in their nodules are capable of releasing a certain amount of nitrogen which is beneficially taken up by the grass constituents present. Where there is good balance of white clover present, this indicates a healthy growth which will improve stock grazing thereon. Stress should be laid on the amount of white clover present in the pasture: a pasture can contain too much white clover to be of benefit to stock.

£53,000,000 FOR THE RED CROSS

The executive committee of the Duke of Gloucester's Red Cross and St. John Fund was disbanded at its 53rd meeting held in London on Wednesday of last week. By a coincidence the committee had been responsible for collecting during the war £53,000,000.

Congratulating Lord Iliffe, the Chairman of the Fund, and the members of the committee on the successful results achieved, Field-Marshal Lord Chetwode, Chairman of the Red Cross and St. John War Organisation Executive Committee, said the appeal had not only provided the funds needed for the full-scale operation of the Red Cross and St. John during the war, but it was also making possible the continuation into the peace of the work of the British Red Cross Society and the Order of St. John on an appropriate scale.

On behalf of the committee Sir Godfrey Thomas, Private Secretary to the Duke of Gloucester, presented Lord Iliffe with a silver box as a token of the members' esteem and admiration for his leadership throughout the appeal.

QUESTIONS IN PARLIAMENT

Veterinary Education

In the House of Lords on November 6th, Viscount Bledisloe had the following questions on the Order Paper:—

"To ask His Majesty's Government whether, in view of the crying need for a substantial improvement in the relatively low quantity and quality of our home milk supply which is admittedly due in no small measure to the prevalence of preventable bovine disease and the paucity of qualified veterinarians in this country, it is proposed, without further delay, to carry into effect the recommendations of the Reports of the Loveday Committee on Veterinary Education in Great Britain, the last of which was published in April, 1944."

"To ask His Majesty's Government whether, in implementing the recommendations of the Loveday Committee on Veterinary Education in Great Britain, they will consider favourably, in view of the high number and value of farm livestock in the Principality of Wales and the extreme paucity of its qualified veterinary practitioners, the establishment of a School of Veterinary Science in the University of Wales in addition to those contemplated at Cambridge and Bristol Universities."

The noble Viscount said: My Lords, I beg to put the two questions standing in my name, and perhaps I might be allowed, in doing so, on behalf of the agricultural Peers in this House, to welcome the noble Earl, Lord Huntingdon, to the Front Bench and to wish him all success.

The Parliamentary Secretary of the Ministry of Agriculture and Fisheries (The Earl of Huntingdon): My Lords, I should like first to convey my thanks to the noble Viscount for his compliments and good wishes and to assure him that I appreciate them very much indeed. I hope that we shall be able to hear and to avail ourselves of the extremely valuable advice and experience of the agricultural Peers in the rather difficult days ahead.

In answer to the noble Viscount's first question, I should like to say that my right honourable friend, the Minister of Agriculture and Fisheries, is aware that diseases of dairy cows are responsible for a heavy loss of milk, much of it avoidable, and he is fully alive to the importance of extending and improving the veterinary services of the country with a view to reducing this and other losses. The noble Viscount, being familiar with the recommendations of the Loveday Committee, will also be aware that some of them relate to matters on which there are divergent, but firmly held, opinions within the veterinary profession. The Loveday recommendations have been under discussion for some time with the Royal College of Veterinary Surgeons and the universities concerned, but so far agreement has not been reached. My right honourable friend still hopes, however, to avoid the unfortunate position that might arise if he found himself compelled to proceed without the support of some of those concerned, and he has, in fact, invited representatives of the Royal College to see him as soon as possible in the hope of arriving at a satisfactory solution.

In answer to the second question I should like to say that the Loveday Committee recommended that, in addition to veterinary schools at the four existing centres in Great Britain, two new schools should be established within the Universities of Cambridge and Bristol, respectively. The Committee considered representations urging the establishment of a veterinary school in Wales, but reach the conclusion that the school at Liverpool University would continue to attract students from North Wales, and that the proposed new school at Bristol, in addition to catering for South-West England, would also meet the needs of South Wales. The Committee added, however, that if further schools were needed, Wales, among other areas, would have to be further considered. The provision of the two new centres at Cambridge and Bristol would result in a substantial increase in the output of veterinary graduates and my right honourable friend is of opinion that the establishment of still further centres should not be necessary at present.

Viscount Bledisloe: My Lords, I have to thank the noble Earl for his reply. I give notice that, in the course of the next three months, I shall open a debate on this subject.

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In the House of Commons:—

Calves (Vaccination)

Lieut.-Colonel Corbett asked the Minister of Agriculture when he proposes to extend the calfhood vaccination scheme against contagious abortion to all cattle in addition to dairy herd heifers.

Mr. T. Williams: Until more veterinary man-power is available, it would not be practicable to consider the extension of the calfhood vaccination scheme to all cattle herds.

Cattle Diseases (Penicillin)

Lieut.-Commander G. Williams asked the Minister of Agriculture what progress has been made in applying penicillin to the cure of cattle diseases in this country; and whether he anticipates that it will be possible, as a result, to improve present arrangements for dealing with bovine tuberculosis, mastitis and Johne's disease.

Mr. Williams: Penicillin is being used in experiments in the control of mastitis in dairy cows. The work is being carried out at several centres in England and Scotland under the co-ordination of the Agricultural Research Council. The stage has not yet been reached when definite conclusions can be drawn, but the results to date have justified an extension of the trials, and arrangements for this have been made. Penicillin therapy has not been found effective in the control of diseases such as bovine tuberculosis and Johne's disease.

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T.T. Milk

Major Conant asked the Minister of Food what proportion of T.T. milk produced in the country is incorporated in the bulk supplies that are heat-treated before sale to the public.

Sir B. Smith: No records are kept of T.T. milk which is bulked with other milk and heat-treated before sale to the public, and I am unable, therefore, to state what proportion it represents of the total amount of T.T. milk produced.

Major Conant enquired, does the right hon. Gentleman appreciate the wastage that results from heat-treatment of T.T. milk, and whether he will take every step to find a market for all T.T. milk at the present time?

Sir B. Smith: I will do my best. If there is a demand for it, it will find its way to the person demanding it.

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Irish Bulls

Mr. Kenyon asked the Minister of Agriculture if he is satisfied that the standard of bulls imported into this country from Ireland is equal to the standard now required by this country under the new licensing regulations.

Mr. Williams: Very few bulls are now being imported from Eire into Great Britain. No bull over the age of ten months that is imported for breeding purposes can be kept unless it is licensed in accordance with the Regulations made under the Improvement of Livestock (Licensing of Bulls) Act, 1931. Any imported bull that does not reach the required standard must be castrated or slaughtered.

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Scotland: Sheep Stocks (Losses)

Sir B. Neven-Spence asked the Secretary of State for Scotland what annual percentage loss is held to be justified on economic or food production grounds among sheep stocks put on high ground in Scotland taken over by the Department of Agriculture for Scotland.

Mr. Fraser: There is no generally accepted standard of health which could be applied as a test of the economic soundness of a sheep-farming enterprise. The annual percentage of loss of sheep which could be justified will vary according to the circumstances of the particular subject. The loss among stock placed on deer forests and similar lands by the Secretary of State for Scotland during the war period up to November, 1944, is just under 20 per cent. per annum. Omitting the disastrous winter of 1940-41 when exceptional losses followed severe snowstorms the percentage is less than 17 per cent. per annum. The results are considered to have justified the stocking of these areas, which, when taken over, were either unused, or inadequately used, for production purposes.

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Agriculture: Long-Term Policy

Mr. Boothby asked the Minister of Agriculture when he will be in a position to announce the long-term policy of His Majesty's Government for agriculture.

Mr. Stubbs asked the Minister of Agriculture whether, in view of the farm-workers' application to the Central Wages Board for a minimum wage of 90s. per week, which involves farmers' prices, he will now inform the House when the agricultural policy of the Government will be announced.

The Minister of Agriculture (Mr. Thomas Williams): I have nothing to add at present to the reply I gave to the hon. Member for Rugby (Mr. W. J. Brown) on October 15th.

Mr. Boothby: Does the right hon. Gentleman recollect that the agricultural industry has been waiting for a long-term policy now for three years and when does he think he will be able to announce it?

Mr. Williams: Certainly it will not have to wait another three years.

Mr. Stubbs: Does my right hon. Friend realise that delay in announcing the Government's agricultural policy is interfering with the men returning to the land and that the application now before the Wages Board is not likely to receive the consent of the farmers until they know what is the Government's policy?

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Nov. 17th.—Annual Meeting of the Society of Women Veterinary Surgeons, 69, Great Peter Street, Westminster, 2.15 p.m.
Nov. 17th.—Meeting of the Nutrition Society (English Group) at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, 11 a.m.
Nov. 27th.—Meeting of the Agriculture Group of the Society of Chemical Industry, at the Royal College of Science, S.W.7, 2.30 p.m.
Nov. 28th.—Meeting of the West of Scotland Division, N.V.M.A., at Glasgow (George Hotel), 2.30 p.m.
Nov. 30th.—Meeting of the Royal Counties Division, N.V.M.A., at Reading (Caversham Bridge Hotel), 2.30 p.m.
Nov. 30th.—Annual General Meeting of North Wales Division, N.V.M.A., at Rhyl (Imperial Hotel), 2.30 p.m.
Dec. 4th.—R.C.V.S. Written Examinations.
Dec. 5th.—R.C.V.S. Written Examinations.
Dec. 6th.—Meeting of the Central Veterinary Society at the Conway Hall, W.C.1, 2 p.m.
Dec. 13th.—Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Star Hotel), 2.30 p.m.

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Scheme for the Control of Certain Diseases of Dairy Cattle in Scotland

Lest any misunderstanding may have been created by the notice anent the above, which appeared on pages 466 and 476 of recent issues of *The Veterinary Record*, we have been asked to state that the appropriate arrangements were made by the officers of the Scottish Branch on behalf of the Executive of the National Veterinary Medical Association.

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Veterinary Surgeons' Fees and Tariff Insurance Companies

Following representations made by the National Veterinary Medical Association, the Accident Offices Association (central body of the tariff insurance companies) have decided that in respect of examinations conducted on and after December 1st, 1945, there will be the following percentage increases, to be shown as such on accounts, in the present scale of maximum fees:—

Turn-out fees (regardless of value)	...	50 per cent.
Per capita fee up to £100 value ...	...	50 per cent.
Per capita fee over £100 to £300	...	33⅓ per cent.

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PERSONAL

Appointment.—Miss Margaret Lennie, M.R.C.V.S., Dunoon, has been appointed Meat Inspector and Veterinary Officer under the Highlands and Islands Veterinary Service scheme for Cowal.

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Mr. J. W. McIntosh Seriously Ill.—Our readers will learn with deep regret that Mr. J. W. McIntosh, M.R.C.V.S., F.R.S.E., of Crieff, Perth, Hon. Treasurer of the Royal College of Veterinary Surgeons and President of the National Veterinary Medical Association, 1927-28, is lying seriously ill in a nursing home in Edinburgh. We are informed that recently Mr. McIntosh had some intestinal trouble and, after an X-ray examination, underwent an operation on November 3rd. Although he stood it remarkably well for a man of his age, Mr. McIntosh's condition continues to give rise to concern. Members of the profession will wish us to express, on their behalf, heart-felt hope for his recovery and much sympathy with him in his illness and with Mrs. McIntosh and their daughter, Mrs. Nickinson, during this anxious time.

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Dr. Fred Bullock.—It is with great pleasure and relief that we are able to report very satisfactory progress towards recovery by Dr. Fred Bullock, who has derived much benefit from a three weeks' stay at the seaside.

Marriage.—Pullon—Harvie.—At Musoma, Tanganyika Territory, on September 29th, 1945, between Ivor Bertram Pullon, M.R.C.V.S., Colonial Veterinary Service, and Zana Waddell Harvie, of Airdrie, Scotland.

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Sir George Stapledon.—Sir George Stapledon has expressed a desire to be relieved as soon as possible of his responsibilities as Director of the Grassland Improvement Station. Sir George undertook to organise and direct the work of the Station as a war-time task. Now that the war is over he wishes to have more leisure and to be free to devote his energies to a number of varied problems that are of particular interest to him. In the circumstances the Minister has agreed, with great reluctance, that Sir George should relinquish his present post as from December 31st.

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"EVANS" VETERINARY STUDENTSHIPS

Further to our previous announcement of Evans' Veterinary Studentships, awarded under the auspices of the Veterinary Educational Trust, we have to intimate the addition of the name of Mr. J. B. Wilson as having been awarded a Studentship, tenable for his fifth year at the Royal (Dick) Veterinary College, Edinburgh.

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HILL FARM RESEARCH: SCOTTISH COMMITTEE APPOINTED

The Secretary of State for Scotland has approved the appointment of a Hill Farm Research Committee of the Scottish Agricultural Advisory Council to operate for a three-year period.

The Committee's duties will be:—

To keep in touch with the progress of scientific research on the specific problems affecting hill farming, and also with experiments in new farming methods.

To advise the Department of Agriculture the steps which should be taken to test promising results with a view to their introduction into general practice;

To expedite the incorporation into ordinary farming practice of new knowledge proved to be generally applicable;

To review the problems of farmers in order to advise, in the light of current agricultural policy, on problems needing scientific investigation or increased scientific attention.

Professor T. J. Mackie, Professor of Bacteriology, Edinburgh University, has been appointed Chairman, and other members are:—

Mr. Ian M. Campbell, Balblair, Invershin, Sutherlandshire; Dr. J. Russell Greig, M.R.C.V.S., Animal Diseases Research Association, Moreton Institute, Gilmerton, Midlothian; Mr. Maitland Mackie, North Ythsie, Tarves, Aberdeenshire; Mr. M. G. McDiarmid, Mains of Murthly Aberfeldy, Perthshire; Sir John Boyd Orr, late director Rowett Research Institute, Bucksburn, Aberdeenshire; Mr. W. H. Senior, Department of Agriculture for Scotland; Mr. J. F. Sproat, Boreland of Anwoth, Gatehouse, Kirkcudbrightshire; Mr. Duncan Stewart, Millhills, Crieff, Perthshire; Mr. J. A. Symon, Department of Agriculture for Scotland; Professor John Walton, Department of Botany, University of Glasgow.

This step is one of the Government's responses to the Balfour of Burleigh Committee's report on hill sheep farming. Their recommendations included a proposal that a hill farm research station should be set up.

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R.C.V.S. ANIMAL MANAGEMENT EXAMINATION

List of Successful Candidates

London:

Bowler, G. T.	Jones, W. A.
Brown, F. G.	MacMichael, Miss E. M. H
Caspari, E. L.	Ogden, A. L. (Credit.)
Cousens, A. D.	Pinniger, R. S.
David, H. W.	Pingrim, F. P.
Green, Miss M. K.	Smith, F. R.
Glas, G. M.	Smith, R. N.
Hammond, J. A.	Tarry, A. R.
Harwood, P. M. A.	Taylor, P. E.
Hicks, J. B.	Toombs, J. H. F.
Howorth, John	Toovey, J. A.
Hughes, Miss Rosemary	Turner, Miss P. J. (Credit.)
James, Miss V. M.	Walsby, J. B.
Jenkins, J. F.	Whitney, J. C.

(To be continued.)

LEGAL NOTES

Meat from an Unauthorised Source.—Fines totalling £750, with 35 gns. costs, were imposed by the Stipendiary at Tunstall on Ernest Travis, butcher, of Waterloo Road, Burslem, who pleaded guilty to the unlawful possession of more than 300 lb. of meat which had not been issued by the Ministry of Food, and to five summonses for being in possession, for the purpose of preparation for sale, of meat intended but unfit for human consumption.

The case for the prosecution was that the meat was diseased, and that the sale of it would have constituted a danger to public health.

Mr. A. J. Long, K.C., for Travis, said defendant had fallen into temptation in accepting meat from an unauthorised source, but had made comparatively little money from the transaction.—*Meat Trades Journal.*

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ADDRESSES OF DISEASE-INFECTED PREMISES

Foot-and-Mouth Disease:

Yorks.—Linfit Mill Farm, Linfit Lane, Kirkburton, Huddersfield (Nov. 5th); Moor Lane Piggeries, Highburton, Kirkburton, Huddersfield (Nov. 6th).

Swine Fever:

Beds.—Brooklands Farm, Old Warden, Biggleswade (Nov. 9th).

Hunts.—Seradge Bank, Ramsey (Nov. 7th).

Kent.—Willow Tree Farm, Burmarsh Road, West Hythe (Nov. 7th); Smith's Hill Farm, West Farleigh, Maidstone (Nov. 8th).

Kinross-shire.—Springfield Farm, Kinross (Nov. 7th).

Lincs.—The Lodge Farm, Aslackby, Sleaford (Nov. 9th).

Oxon.—Bledington Grounds Farms, Bledington (Nov. 7th).

Stirlingshire.—No. 15 Smallholding, Auchenreoch, Milton of Campsie, Glasgow (Nov. 7th).

Surrey.—Bourne Rise Farm, Brox Lane, Ottershaw, Chertsey (Nov. 8th).

Warwicks.—York Farm, Ilmington, Shipston-on-Stour (Nov. 8th).

Worcs.—Blackpole Farm, near Worcester (Nov. 5th); Allen Farm, Bretforton, Honeybourne (Nov. 10th).

Sheep Scab:

Cumberland.—Scales Farm, Helton Dale, Penrith (Nov. 3rd); Setterah Park Farm, Askham, Penrith, and Keld Head Farm, Helton Dale, Penrith (Nov. 5th).

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RESEARCH ON INDIGENOUS PLANTS

"Shortage of various raw materials necessary to supply all the requirements of the Wehrmacht and civilian hospitals and pharmacies made the Germans search among their own indigenous plants for suitable substitutes," states *The Pharmaceutical Journal*, and continues: "Work was done in various institutions and by manufacturing firms. The raw material was collected by children, who in one year gathered 130,000 kilo of herbs. The following are examples of some of the research which has been carried out:—

(1) An oil extracted from euphorbia was found to be more laxative than castor oil and less purgative than croton oil.

(2) Further work, which also illustrates the general shortage of aperients, was done on the fruit of frangula. An extract was found to have more pronounced laxative properties than an extract from the bark.

(3) An anthelmintic, termed 'alantolakton,' was obtained from radix helenii.

(4) Preparations of *Adonis vernalis* were used in place of digitalis.

(5) Work on *Borila volubilis* produced a glycoside which has a squill-like action and, it is claimed, is many times as active as digitalis."

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FOOD FOR EUROPE

In accordance with the promise he gave to the House of Commons in the debate on conditions in Europe on October 26th, the Minister of Food, Sir Ben Smith, accompanied by the Parliamentary Secretary, Dr. Edith Summerskill, received an all-party deputation of Members of Parliament, which included Sir Arthur Salter, Miss Eleanor Rathbone, Mr. Robert Boothby, Lieut.-Colonel Rees-Williams, Mr. R. H. S. Crossman, Colonel C. E. Ponsonby and Mr. T. L. Horabin.

The Minister told the deputation that he was anxious to do all in his power, consistent with his responsibilities towards the people of this country, to assist the authorities in the British zone of Germany and Austria in their task of combating epidemics which may arise owing to lack of food.

The Minister said that after careful consideration he had decided to make available for this purpose a limited quantity of food, consisting mainly of stocks prepared for the Services which will not now be required and which will not lend themselves to distribution at home.

With no prospect of a London Shire Horse Show being held next year, the Shire Horse Society is again to hold a show and sale in Derby; and a show and sale of geldings at Shrewsbury.

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A new world record price for the Ayrshire breed was obtained at the series of sales of pedigree stock recently held in the county which gives the breed its name. Lessnessock Chargehand, a yearling bull, was purchased at 2,700 guineas, which eclipses the former record price at the same sale of 2,300 guineas paid three years ago.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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"HYPOCALCAEMIA IN THE MARE"

Sir,—The two cases, presumably of this condition, recorded by Mr. Forsyth and Mr. Hodgkinson respectively in your to-day's issue prompt me to make the following comments.

First, both mares had been nursing their foals for four to five months, so that the factor of a sudden demand for calcium, such as has been postulated to be a factor in the aetiology of milk fever in cattle, can be eliminated. Indeed, in Mr. Hodgkinson's case the udder was full, due to the milk not being sucked off, and, though in Mr. Forsyth's case the owner had been stripping the udder, it is extremely unlikely that the amount of milk which was drawn off per 24-hour period, would be greater than the amount which would normally have been sucked off by a four months old foal.

Secondly, in each case the mare doubtless was suffering from *anxiety* due to the loss of her foal and in each case therapy produced an almost *immediate complete recovery*. Both these features are well recognised as being characteristic of some allergic diseases in man.

Thirdly, is there any evidence of the presence of an allergen to which these mares had become sensitised? I would be much interested to learn from Mr. Forsyth and Mr. Hodgkinson whether or not the mares had been grazing on luscious pasture or had otherwise been receiving a generous diet as under these conditions there is some circumstantial evidence that food protein in a still antigenic state may be absorbed into the circulation. This may sensitise the animal and thereafter an anxiety state may be sufficient to precipitate an allergic attack. I would like to know also if the mares were in good bodily condition.

Yours faithfully,

Compton, Berks. A. Brownlee.

November 10th, 1945.

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VETERINARY EDUCATION

Sir,—

"*There is a tide in the affairs of men,*
Which, taken at the flood, leads on to fortune."

When I read the correspondence in your columns, which I have done assiduously throughout this long controversy on the subject of veterinary education, I am constantly reminded of this well-known quotation, the truth of which seems to be in very great danger of being overlooked by those responsible for the future of the veterinary profession in England to-day. Although I have been intensely interested in the subject of veterinary education for many years past and have given a good deal of time and thought towards its improvement in India, I have refrained from entering the lists, up to the present, because I felt that this is essentially a subject for those at home to fight out amongst themselves.

However, I have noticed that a few officers serving abroad have recently contributed to your columns on this subject, and incidentally their views, I believe, have been unanimously in favour of a system of university education, so the views of one serving in India may not be considered inappropriate at this juncture. But chiefly I have been moved to writing by a letter of Dr. Wooldridge in *The Veterinary Record* of September 22nd, 1945, which makes to the leaders of the profession a call, which I have been waiting for so long to make myself, to consider well what they are doing before it is too late.

For many years past we have read *ad nauseam* of the many and varied ways in which the veterinary profession is slighted in the matter of making appointments to Advisory Committees and to research and administrative posts connected with the health, management and disposal of livestock and livestock products, but as Dr. Wooldridge says, "Can we honestly blame anyone but ourselves for this?"

I have no hesitation in saying that, as far as India is concerned, any illiberal treatment that has been meted out in the past when making such appointments has been due not to any desire to shut out members of the veterinary profession, but to the fact that suitably educated members of the veterinary profession for such posts were not readily available. And I may add—still do not exist and will not be forthcoming in the future, in the numbers required, from amongst veterinarians educated in England, while the system in that country remains the same as it is to-day.

In fact the position has become so acute in India that steps are now being taken to introduce a university system of veterinary education in preference to relying on the practice, which has been in vogue for many years, of sending young Indians to England to obtain the M.R.C.V.S. diploma. In plain language, when it comes to a competition for posts with members of such professions as those of medicine and agriculture a man with a diploma, even though it is the diploma of the R.C.V.S., cannot hold his own with a man who has had the advantage of a full university education.

This fact has long been recognised on the continent of Europe and is now recognised throughout the civilised world, except apparently by a majority of the veterinary profession in the United Kingdom. And the pity of it is that the scope to expand the usefulness of the profession is to-day almost unlimited. The desire of the public is to see the veterinary profession take advantage of this great opportunity, but it is exacting in its demands and will not accept a second-rate article. And can anyone deny that anything short of a full university system of education will not produce a first-rate article? To satisfy the public we must get rid of a system whereby many members of the profession spend "four years of mental stagnation at Camden Town," as it was once described in your columns, and a mere sprinkling, with a special aptitude for passing examinations, acquire a degree concurrently with their veterinary diploma. We require a system by which the rank and file of the profession are all given the benefit of a university environment during the prosecution of their veterinary studies.

No one will deny the advantages of a one-portal system of entrance into a profession, but is everything else to be sacrificed to the retention of this tradition? Personally I would say "No," for as I have already observed, the veterinary profession is progressing reasonably well in other countries without it, but I cannot believe that it is impossible to find a compromise which will satisfy both parties.

The profession is without doubt at the parting of the ways. If those responsible for its future policy in the United Kingdom fail to grasp the opportunity which is now presented of bringing the system of education into line and so placing the profession on an equality with the other learned professions, they will have to answer to the younger members of the profession, who, it appears from your correspondence columns, are definitely in favour of a more progressive policy. And as regards the other members of the British Commonwealth, these will no doubt find their own solution, as they have already done in some cases, and leave the profession in the old country with their apparent desire to remain "insular and small."

Yours faithfully,

Department of Animal Husbandry, F. Ware.
Lucknow, India.
October 30th, 1945

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VICTORIA VETERINARY BENEVOLENT FUND

Christmas Appeal

Sir,—May we again appeal to the generosity of members of the profession for gifts to enable us to send a little extra money to our recipients so that they may have a few extra comforts this Christmas? Many widows of veterinary surgeons left unprovided for, a few old and infirm members who can no longer practise, and several families of children, are among those whose poverty the Fund is relieving to a small extent, and to whom a gift at Christmas is a godsend.

In this year of Victory we hope that a large number of members will wish to express their thankfulness for Peace by a generous response to this appeal.

Cheques should be made payable to the V.V.B. Fund Christmas Fund, and be sent to the Secretary at 10, Red Lion Square, London, W.C.1.

Yours faithfully,

Arnold Spicer, *President*,
J. Basil Buxton, *Hon. Treasurer*.
P. J. Simpson, *Hon. Secretary*.

Victoria Veterinary Benevolent Fund,
10, Red Lion Square,
London, W.C.1.
November 10th, 1945